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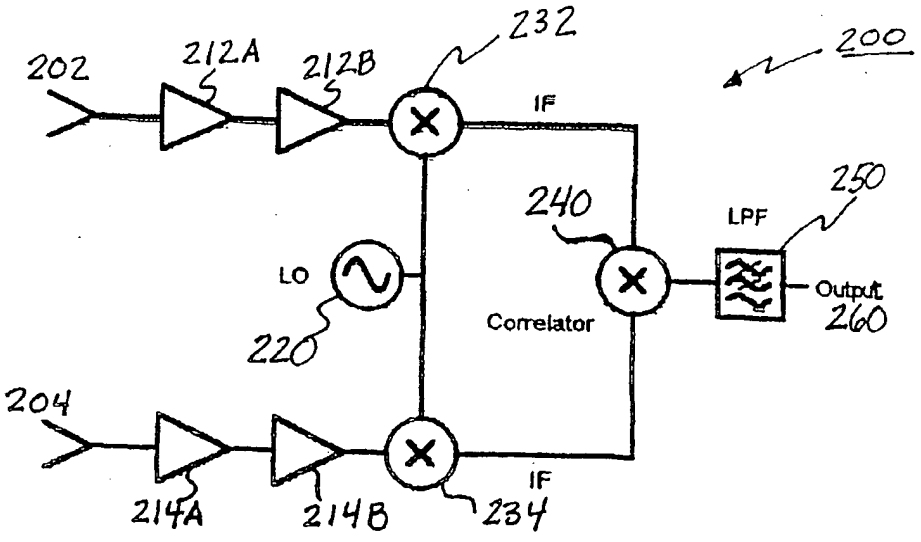
(54) Title: REAL-TIME, CROSS-CORRELATING MILLIMETRE-WAVE IMAGING SYSTEM



(57) Abstract: A method and apparatus are disclosed for forming an image from millimetre waves. A field of view scanned using two geometrically orthogonal, intersecting copolarized fan beams (110, 120) to receive millimetre wave radiation. The received millimetre wave radiation from said fan beams are then cross-correlated (250, 650). Also, a method and antenna (400, 610) for receiving millimetre wave radiation are disclosed. The antenna includes first and second fan beam antennas (410, 420) for receiving millimetre wave radiation and a filter (430, 440) for rotating polarization of incident millimetre wave radiation through 90 degrees received by the second fan beam antenna (410). The respective first and second beams (110, 120) intersect and are co-polarized and geometrically orthogonal to each other. Still further, a millimetre wave imaging system (600) and method are also disclosed, which utilise an antenna (610) for receiving millimetre wave radiation, process the received millimetre wave radiation from the antenna (610), and build up the image (682) using a filtered, cross-correlated signal.

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